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IN THIS ISSUE

FARMING AND FARM LIFE IN THE MAJOR PRODUCTION AREAS OF ARGENTINA

EIRE'S WARTIME AGRICULTURE

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FARMING AND FARM LIFE IN THE MAJOR PRODUCTION AREAS OF ARGENTINA

By Carl C. Taylor*

Argentina, extending from the Tropics to the south latitude corresponding with that of Hudson Bay in the north, and having wide variations in rainfall and soil quality, has many specialized farming areas. Social conditions, land tenure, labor practices, and the composition of the population vary with the type of specialization in the various farming areas. In order to understand the agriculture of Argentina, one must study these social and economic factors as well as the actual figures for acreage and production.

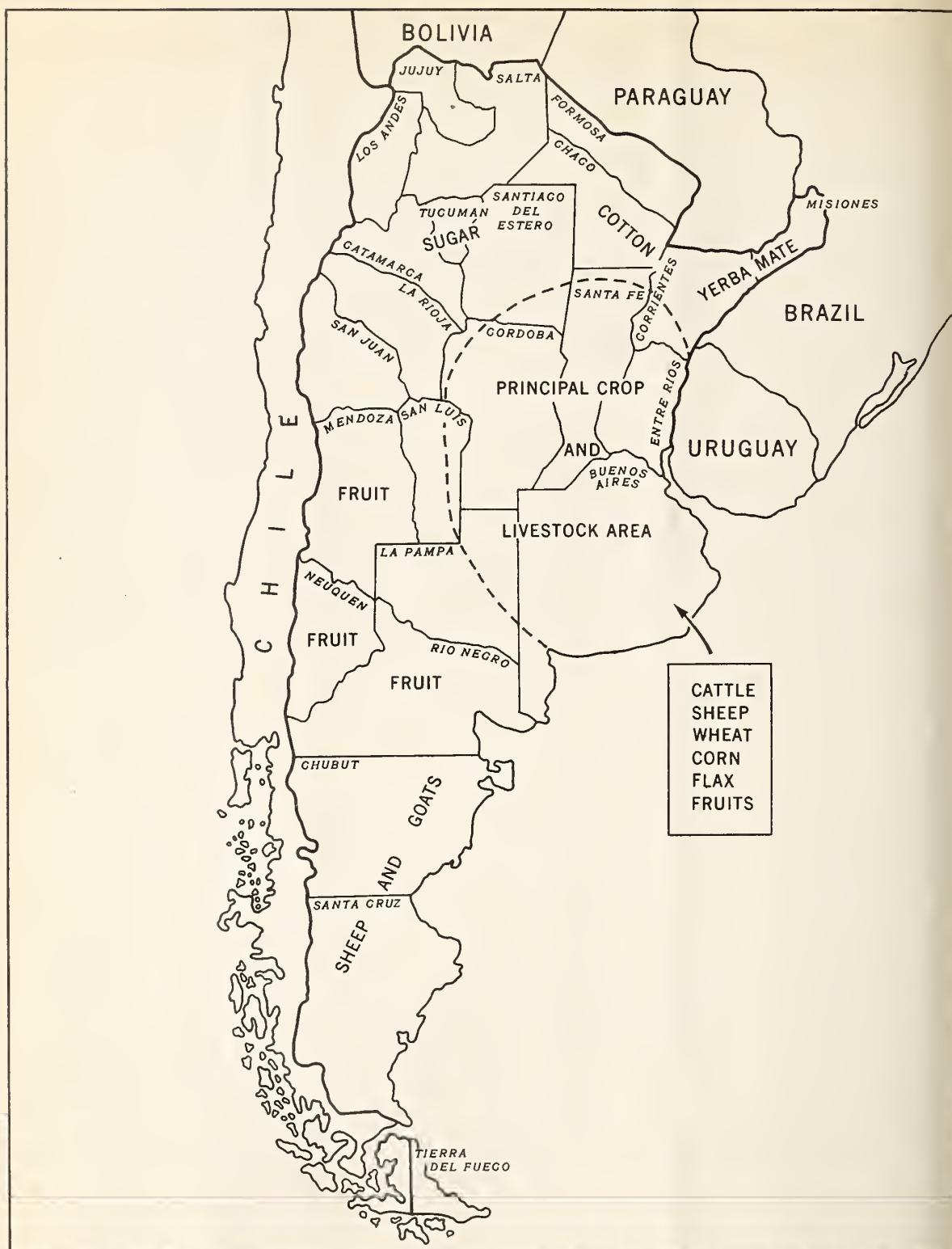
THE EVOLUTION OF SPECIALIZED TYPE FARMING BELTS

In Argentina, as in North America, various Indian tribes had some domestic agricultural production when white settlers entered the country, more than 400 years ago. The fact that these tribes did not practice commercial agriculture kept their production confined to those things which they could use in local domestic consumption. White settlers who arrived before 1600, because of lack of transportation, were compelled to follow much the same practices as did the Indians, often in fact adapting and improving on these practices. Some of them, however, brought with them seeds of other plants, such as wheat, oats, and barley; domesticated animals, such as horses, asses, goats, hogs, and cattle; fruits; and vegetables. Even these were for a long while produced and used only for local consumption.

Cotton was the first commercial farm crop produced in Argentina. Its production area at that time (1600) was not, however, in what is now the cotton belt of the nation. Wheat was first specialized in the area that is now the principal vineyard belt. The Tucuman area, now chiefly dedicated to the production of sugarcane, for a long while competed with the humid pampa in commercial cattle production and a little later became a wood-manufacturing area. Corn, which was late in attaining a commercial status, was for some time produced in greater quantity in what is now a part of the alfalfa, winter, cattle-feeding belt than it was in the heart of the present corn belt. Gradually, however, one production belt after another developed its agricultural specialization; other areas gave up commercial competition in that speciality; and the present regional farm-production patterns became established. Geographic adaptation was a leading but not the sole cause of these specializations.

The time at which areas were settled, especially the periods in which specializations became established, depended a great deal upon the stage of internal-transportation development at the time, the stage of evolution in agricultural science and technology, and the position which the nation had established in world trade at that particular period. Settlement depended also upon the distribution of land ownership, which was largely an accomplished fact before certain type production belts came to play their present relative roles in the nation's economy and culture. The cattle belt, for instance, might be altogether differently organized had not large holdings in that area been allotted before commercial cattle production became well established;

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and the cotton belt might be organized in large plantations, as it is in so many other areas of the world, were it not for the fact that the land in the present region of cotton production has been and is being allotted in family-sized small holdings.

### THE CATTLE BELT

The production of cattle and the status of cattlemen in Argentina afford a good illustration of the combination of geographic adaptations and cultural influences. Cattle are raised on over four-fifths of the geographic area of the nation, but the heart of the cattle belt can be much more localized and the influence of cattlemen much more easily understood if it is described as an area that runs from the northern boundary of the Province of Corrientes to the southern boundary of the Province of Buenos Aires, including also the Provinces of Entre Ríos and Santa Fé, and parts of Córdoba and La Pampa. Within this belt lie also the major portion of the cereal belt and two sheep belts, although it contains considerably more than nine-tenths of the nation's cattle, both beef and dairy types, and the vast majority of the cattlemen live in it.

Cattle culture, the word culture being used in the sociological sense that includes the influence of traditions, institutions, and the social status of cattlemen, is of greater importance in the nation than would be indicated by the number of cattle or the volume of beef exports. This is true, not only because Argentina first established its position in international trade through the export of cattle products, and because large landholdings, established early in the nation's economic development, have become institutionalized in great *estancias* (cattle ranches), but also because a whole body of literature and national attitudes have over the years grown up to buttress the cattle complex. As a matter of fact, exports of sheep products began to exceed those of cattle fully 60 years ago; and, under pre-war conditions, cereal and flaxseed exports were regularly twice the value of all livestock exports. Even so other countries and the majority of persons in Argentina think of the nation as a great cattle country, and so it is. It has two and one-half times as many cattle as people, and the per capita or gross consumption of beef exceeds that of any other country in the world. Its cattlemen are not only the most elite but the most influential group of producers in the nation.

The cattle belt should be divided into two, possibly three, subbelts; namely, the breeding belt, the feeding belt, and the dairy belt. The breeding belt is chiefly in the humid pampas, the feeding belt chiefly in the dry alfalfa area, and the dairy belt is divided among areas dominated by the metropolitan influences. The development of alfalfa in the dry pampas area greatly increased the carrying capacity of Argentine pasture lands and thus increased the possibilities of cattle production. The cereal-production belt was, however, carved out of the cattle belt and thereby reduced the actual pasture acreage. The dairy belt in the Province of Buenos Aires has been developed in the heart of the livestock-breeding area, chiefly by conversion of *estancias* into dairy farms, and that in the Province of Santa Fé has been developed largely on small farms, where dairy production is a part of the diversified farming operations.

A unique phenomenon in the cattle-breeding belt is the widespread practice of farm-tenant operation; fully 80 percent of all farmers are tenants, and 90 percent of all tenants pay cash rent. They own the breeding herds, all the working capital essential to their operations, and in most cases the houses in which they live. Most of the landowners live in the large cities and have nothing more to do with the mass cattle-breeding enterprise than to own the land. In the same area, however, are the

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famous *cabañas*, the estancias upon which the top, purebred, finest cattle of the nation are produced and prepared for the great Palermo Exposition and sale, which has been held each year for more than 60 years. These establishments are operated by "administration"; that is, by farm managers, who together with their estancia employers have converted the national herd from one of scrubby, half-wild mavericks into one of the finest in the world.

The farms in the humid pampas produce and raise cattle to the 2-year-old stage, pasturing them upon native and domestic grasses in the summer and upon oats, wheat, rye, and sudan pastures in the winter. Then they are transported to the alfalfa, winter-feeding zone, where they are fed from 6 months to a year before being shipped to market. Some estancieros own lands in both areas and thus integrate the two stages of production into a single enterprise. In a typical feeding area, however, 70 percent of the farm operators are tenants, of whom 80 percent pay cash. They rent large estancias, buy feeder cattle, fatten them, and sell them to the packing companies.

THE SHEEP BELT

Sheep are also widely distributed over the nation but are more highly concentrated than cattle as far as major production areas are concerned. One large sheep zone is in eastern Entre Ríos and southeastern Corrientes; another in southern Buenos Aires; and the largest one occupies practically all of Patagonia, which is approximately all the continental territory of Argentina south of latitude 39 S. Because sheep production is mixed with cattle and even with cereal production in other areas and because it is almost the sole enterprise in the greater part of Patagonia, this latter area is described here. Patagonia has an area of 300,000 square miles with a human population of approximately 480,000 and a sheep population of 17,000,000. In it are the largest landholdings and the largest-scale farm operations of the nation. In the most typical sections more than 99 percent of all farms are larger than 1,500 acres, and a number of them are more than 500,000 acres in size. The working population is less than 0.3 person per square mile, more than 70 percent of all farm headquarters are more than 15 miles from railroad stations or ports, and approximately 50 percent of the farm homes are more than 15 miles from a public school.

The typical method of operating a large sheep estancia is by "administration." In some cases the land is divided among tenants and sharecroppers, so to speak. They receive their sheep from the manager, agree to handle them in specified ways, and finally turn them over to the manager for marketing. The renter receives 25 percent of the net sales for the sheep and wool he delivers to the manager. The average renter is given responsibility for 6,000 to 10,000 sheep. In the best grazing area his herders handle 2,000 head, in the poorer grazing areas not more than 1,000 head. The average wage of the herder is from \$10 to \$15 per month, plus housing and food. The same is true whether he works for a tenant or a farm manager.

The dominant social characteristics of the great Patagonian sheep belt area are: The great degree of isolation; the high percentage of permanent, unmarried hired men and thus a great unbalance of sexes; extremes of wealth and poverty between the classes; and relatively good housing, because of the severely cold climate. Many managers' children in the area are too far from schools to attend. They are therefore taught in their homes until 9 or 10 years of age and then sent away to the city. Many of the sheep herders are Chileans, part Indians, and, in most cases, unmarried men. Everyone, however, has enough to eat and wear and lives in a comfortably warm house, even though it may be a communal barracks at an isolated spot on a great farm.

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## THE CORN BELT

The heart of the corn belt lies between the cattle and wheat belt, overlapping each at the margins. Corn is usually not fed to livestock, except to hogs and a few of the dairy cattle; it therefore had to establish and must maintain its place as an export crop. Nevertheless it has, over the last 50 years, carved its way into the cattle and wheat belts; both well-established, and it almost completely dominates an agricultural area in northern Buenos Aires and southern Santa Fé. Certain farms have their total cultivated areas planted solidly to corn, leaving only enough space for a few buildings, a garden, and a small grass patch to produce feed for work animals. When this grassland is planted to alfalfa, it is generally not on a large scale, since a 160-acre farm can be operated with 8 or 9 horses, and they may be the only livestock kept.

Only a relatively small percentage of the farms in the corn belt are, however, planted solely to corn, although the majority of them are almost purely grain farms, producing corn, flax, wheat, and other small grains. The corn-hog combination, so common in the United States, doesn't prevail in the Argentine corn belt for three reasons: First, hogs have not yet made much headway in a society that prides itself on fine beef; second, in past years most tenants have not been permitted to raise more than a few hogs; and, third, in most years the price situation has favored corn exports. The population of the nation eats twice as much meat per capita as is consumed in the United States but much less pork. Even those tenants who are permitted to produce hogs do not do so, even though they have to purchase a great deal of beef.

The tenancy rate in the corn belt is high (73.6 percent), ranking next to the cattle-breeding belt among the type-farming production areas. The majority of tenants (56.4 percent) pay share rent, the typical contract requiring that they pay from 34 to 36 percent of the shelled grain, delivered to a shipping point. Other provisions of a typical tenant contract are as follows: The period is limited to 5 years; the tenant may not have more than 10 percent (sometimes 5 percent) of the land in grass; he cannot keep more than 1 adult hog for each 25 acres rented; and he must butcher or otherwise dispose of pigs before they reach a weight of 190 pounds. Furthermore, the tenant must build his own house and furnish all other buildings and fences, as well as his own work stock and farm machinery. The result is that he generally builds a mud house, leaves both his animals and farm machinery unhoused, buys most of his meat supply, and changes farms frequently.

Many large holdings in the corn belt are still held intact but have been converted or partially converted into *colono* (tenant) farms. If the *estancia* was formerly an operating unit of 30,000 acres and was converted completely into *colono* operation, it now accommodates from 100 to 200 tenant farm families. If it is still operated partly as an *estancia*, then one-third, one-half, or two-thirds may be tenant-operated, the remainder administration-operated. This latter practice is quite common in the area where the cattle belt blends into the corn belt but not uncommon all through the corn area. The owner of the *estancia* accomplishes two things by this type of operation: (1) he gets his pasture land cleared of weeds periodically, and (2) he keeps himself in a position to shift from grain to livestock farming, or vice versa, according to which is more profitable at the time.

The general occupancy or settlement pattern in the corn belt appears from an airplane much like that in the corn belt of the United States. One sees scattered farmsteads, each located in a grove of trees, symmetrically shaped fields, other types of grain rotated with corn, and even some grassland. In the northern part of the belt,

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where owner-operatorship is more prevalent and the farm enterprise includes more small grain and dairying, the farm homes are as substantial as those in the corn belt of the United States.

THE WHEAT BELT

The Argentine wheat belt can best be described as a semicircular zone that swings southeastward from central Córdoba around the western boundary and then through the southern part of Buenos Aires Province. One would be more readily understood, however, if the wheat area were described as two belts, the heart of one in south central Buenos Aires, and the heart of the other in south central Córdoba. Since the one in Córdoba is dedicated more definitely to single-crop practices, what is said here applies chiefly to it. Some wheat is grown much farther north, some much farther west, and considerable across the Paraná River in Entre Ríos, but in such areas it is mixed with other farm enterprises.

Wheat was the first major farm product to enter export markets by ocean shipment, some wheat being exported to Brazil as early as 1602. It had an indifferent development, however, during the next 200 years. It was, nevertheless, the first cereal crop to break the virtual monopoly of livestock in Argentine agriculture, a thing not easy to do. The local government of the Province of Buenos Aires in 1755 ordered "those who are damaging the livestock industry by having chacras [crop farms] out in the estancia country immediately to bring their chacras into areas near the city which were meant for crop farming."

Considerable wheat production developed before 1800, chiefly in the Provinces of Mendoza, Córdoba, and Buenos Aires, with Buenos Aires distinctly leading; but it was not until late in the nineteenth century that wheat culture made definite headway against livestock, which occupied the natural zone of wheat adaptation. Developments in transportation, improvements in farm machinery, and the arrival of peasant farmers from Europe gradually tipped the scales in favor of wheat in the areas that it now occupies. This development, beginning shortly after 1860, increased in acceleration during the next decade but has chiefly taken place since 1880. Many old estancia fences, now mostly in a dilapidated condition, are still standing on purely wheat farms, and some large cattle estancias are still operating in the wheat belt. Some of the estancias have been divided and sold in smaller tracts and some, as in the corn belt, converted into colono (tenant) farms by subdivision, the ownership remaining unchanged.

Today approximately 60 percent of all wheat farms are tenant-operated, 75 percent of them by share-rent contracts. They are considerably larger than corn farms. They average 615 acres in size, but many of them are three times that large. The tenant farmer growing wheat has, therefore, a great deal of capital invested in farm machinery and is a large-scale operator. His contract is likely to be almost identical to that described for the corn belt, and he is therefore driven to an extensive type of operation.

The working population of the farm in the wheat belt averages only 8 per square mile, which is less than half that of the corn belt and less than one-tenth that of the vineyard, fruit, or sugarcane belt. Thirty percent of the farms are more than 9 miles from railroad stations, and more than 60 percent of the farm homes are more than 3 miles from a school. Other social conditions are fairly good, illiteracy is relatively low, housing is relatively good, and more than 35 percent of the farmers have been on the same farm for more than 10 years.

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## THE COTTON BELT

Cotton was produced by the Indians in what is now the Province of Corrientes before white settlement, and north central Corrientes is still the second largest cotton-producing area of the nation. The real advent of cotton into Argentina was, however, in Santiago del Estero, where it was brought from Chile in 1556. It quickly became the major farm crop in most of the area that now comprises the three Provinces of Santiago del Estero, Catamarca, and Tucumán. Cotton cloth, which native Indians were taught to weave, was sold to Peru and Brazil as well as to Buenos Aires. Cotton growing continued to be the chief enterprise in Catamarca for more than a century. As a textile, cotton gave way to wool in the Tucumán area much earlier and gradually disappeared, not only from its early area of greatest production (Catamarca) but also from Misiones, where the Jesuit missionaries had taught the Indians to grow and weave it. It did not reappear as a commercial crop until about 1890. When it reappeared, its zone of production was in the Chaco Territory, the present heart of the cotton belt. Its development was at first slow; only 2,560 acres were planted in the whole nation in 1899 and only 7,600 in 1916. A marked expansion came after the World War. The area planted in 1924 was placed at 258,000 acres. By 1940 it had increased to 832,390 acres, 81.6 percent of which were in the Chaco. Today, therefore, when one refers to the Argentine cotton belt, he is almost surely talking about the Chaco Territory.

More than 55 percent of all cotton farms are smaller than 124 acres, and small-scale production on family-sized farms is the typical pattern in the cotton belt (although there are a number of large cattle ranches in the area). Settlement in the area is new, and most of the settlers came from northern and eastern Europe - Poles, Czechs, Russians, Yugoslavs, Germans, Bulgarians, and others. The earliest tide of immigration into the area was from southern Europe, and Spanish settlers, therefore, far outnumber any other nationality group, followed by Poles, Yugoslavs, and then Italians. All are peasant-type farmers; this fact, plus the program of allotting small farms by the National Government, has served to develop cotton production on small holdings, rather than on plantations. Only 17.1 percent of the cotton farmers are tenants, the vast majority of these paying cash rent. Many cotton farmers are still squatters, because the General Land Office has never had sufficient funds to keep its surveying, land-classification, and title-transfer program moving at a rate as rapid as that of arriving settlers.

Because many settlers have located as squatters, and because most of the area is wooded, the pattern of settlement in the newer areas is irregular. Although cotton farms are relatively small, yet many cotton-producing farm families live in relative isolation. More than 55 percent of all farms are located 9 or more miles from a railroad station, and approximately 45 percent of all farm homes are more than 3 miles from a school. Roads to farms are narrow, unimproved trails, winding through heavily timbered areas to the isolated farms and leading out to the one national highway - a dirt road, which traverses the Chaco from east to west. Local transportation of cotton to the gins is, therefore, a burdensome task. Wagons with relatively light loads are pulled over the trails and through the chuck holes by teams of 4, 6, or 8 small mules, or sometimes by oxen.

Almost 25 percent of the heads of families are illiterate, but the children of all except transient cotton pickers attend school. The teachers testify that both parents and children of recent immigrants insist upon regular attendance and that the children are eager to learn. The schoolhouses, built by the farmers, are crowded

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with children, who are taught by teachers employed by the National Government. Farm houses are constructed mostly of mud and thatched. As rapidly as ownership of farms is guaranteed, however, settlers build substantial brick houses. Transient laborers, of whom there are many during the picking season, are housed less satisfactorily than any other people in Argentina, except those in the yerba-maté belt.

THE YERBA-MATÉ BELT

The yerba-maté belt is in Misiones and northern Corrientes and produces many other products than yerba maté. The development of this area was started by Jesuit missionaries between 1600 and 1800, but of that movement only the ruins of the early missions remain, some of which are preserved as national monuments. The Indians, who were taught by the Jesuits to engage in various handicrafts, domesticated the wild yerba tree. Misiones became, so to speak, a lost province after the Jesuits were expelled. It belonged to the Province of Corrientes, which in 1880 sold what was thought to be all its land in holdings of tremendous size. Because survey lines were inadequate at the time of the sales, the National Government afterward found that it still owned approximately one-half the land that was taken over. It was converted into a national territory in 1882. The Government is now pursuing a program directed toward colonizing farmers on family-sized farms. In 1937, 81.5 percent of all land was in holdings of more than 1,544 acres in size, although 89.7 percent of all farms were less than 124 acres in size. The belt is, therefore, a combination of tremendous yerbals (plantations), some of which have also planted tung trees, and small farms, many of which have some yerba-maté trees.

The production of yerba maté is concentrated in the southern part of the territory and in isolated settlements along the Upper Paraná River, the boundary line between Argentina and Paraguay. The river furnishes the only means of transportation into and out of the area. Where yerba maté is produced on large plantations, as most of it in Argentina is, the pattern of settlement follows that of the so-called "establishments" in the lower area, or that of the colonies up the Paraná River. Thousands of trees are planted as in great orchards. They are kept trimmed to a height of 8 or 10 feet, in order to make them bush and thus produce a maximum of leaves and small branches, but also to make picking easy. Harvesting is done largely by transient laborers, many of them Paraguayans, but each yerbá has a sufficient amount of permanent or semipermanent employment to warrant the establishment of permanent settlements. In the southern part of the belt such settlements are generally of a loose village type, with some residences grouped about the drying plant and others scattered throughout adjacent areas. In or near the nucleus of such a settlement are located generally a store, a school, and sometimes a church. Most of the transient laborers live in mud and bamboo huts around the yerba-maté planting, where all the family - men, women, and children - work.

In both sections of the belt are colonies, the farmers of which are not primarily yerba-maté producers. In the southern section, around Oberá, the colonists, who are recent immigrants, are developing mixed farming, usually with some yerba and orange trees, many times with some tobacco, and always with subsistence crops and animals. The largest settlement up the river is Eldorado, established by a private colonization company. All the early settlers in this colony grow some yerba maté but other crops as well. The later settlers are mixed farmers, many of whom now produce some tobacco, but only few have substantial plantings of yerba maté.

In Eldorado the vast majority of the producers are Europeans. More than half the farmers have lived in the area as long as 10 years, and approximately 90 percent have

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come during the last 25 years. In the Oberá area 15 nationalities are represented by 15 or more farmers; most of them are European, but about a fourth are from Brazil, Paraguay, or Uruguay. Brazilians, some of German and other European stock, constitute the largest group. Poles make up the greatest European group, followed by Germans, and a few Japanese and a few Turks are in this area. Approximately 38 percent of all farmers of the locality have settled there in the last 10 years and approximately 90 percent during the last 25 years. Misiones is a pioneer area, inhabited chiefly by foreign-born settlers, a few of whom have been naturalized. Many of these newcomers produce little yerba maté, and a generation hence the area will probably not be properly described as a yerba-maté belt.

### THE SUGARCANE BELT

When one first enters the sugarcane area near Tucumán it appears to be formed by a series of large plantations, each with a sugar factory attached to it. More than 57 percent of all sugarcane in that Province is produced on farms larger than 490 acres in size, and there are 38 sugar factories in the Province. The large-scale producing unit is the *ingenio* - a big plantation with its own sugar factory. These factories, however, process the cane from smaller farms, and 94 percent of all sugar producers live on farms less than 124 acres in size. The vast majority of them are farm owners. Nearly every person in the heart of the area produces sugar, some as few as twenty 100-meter rows, some of them 100,000 such rows.

Sugarcane, like many other major farm crops now grown in Argentina, was introduced early but did not develop to any great importance until fairly recent years. It was brought to the northwestern part of Argentina from Brazil, by way of Asunción, Paraguay, and the first sample of refined sugar was sent to Spain in 1556. Sugarcane had, however, apparently disappeared before 1800. It did not reappear until about 1820, when the cane was brought from Peru to Salta and Jujuy and thence to Tucumán by Colombres, a Catholic priest, now generally recognized as father of the Argentine sugar industry. The first sugar factory was established in 1840; by 1860 there were 25. After the construction of the railroad from Santa Fé to Tucumán in 1876, production increased rapidly, from 5,434 acres of cane in 1876 to 13,338 acres in 1881 and to more than 100,000 acres in 1895.

During the last half of the sixteenth and the first half of the seventeenth century the present sugarcane area of Tucumán was in the heart of the cotton belt, which was also producing great quantities of hides. There were still 303,320 head of cattle in the Province in 1895. After wool displaced cotton as a textile, the Tucumán area specialized in the production of mules and horses and manufactured carts and wagons to supply the demand for vehicles for the traffic between Argentine Provinces farther south and Bolivia and Peru. In 1940 sugarcane production occupied 61.4 percent of all the cultivated land in the Province and would probably now occupy even more if production was not nationally controlled. It so predominates the area that it dictates all the economic and social patterns of the area. Even many cabins for transient laborers are built of sugarcane stalks.

Some small owner-operators in the area practice subsistence farming, but most of them are primarily sugarcane producers who purchase meat and even vegetables, though most of them produce their own fruits and chickens. The smaller ones supplement their income by working on the large plantations.

The large *ingenio* is most often operated by a farm manager called an *administrator*, who may have submanagers sometimes called *mayordomos*. It may be operated

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altogether with field bosses (*capataces*) or parts may be sharecropped by tenants (*colonos*). In all cases the administrador prepares the ground and plants the cane, using the most modern mechanized farm equipment. Thus the heavy plowing is done on a mass-production basis, no matter what arrangement is followed in the remainder of the farm processes. From that stage on all labor, except cleaning irrigation ditches, which is off-season work, is done on a piece basis, so much per row for plowing and hoeing and so much per ton for cutting, topping, and stripping cane and handing it to the loader. In addition to wages, employees are furnished housing, some quite good, some poor.

A few concrete data will reveal social life and conditions of farm people in the heart of the sugarcane belt. The population is the most predominately Argentine-born (93.7 percent) of any crop belt of the nation. More than 74 percent of farm entrepreneurs have lived in this area for 25 or more years, and about 54 percent have operated the same farms for more than 10 years. The population, except for the transient laborers, is thus exceptionally stable. The population density is the highest for any farm area of the nation, and the farm-labor density per square mile of cultivated land is more than 100. The results are that 77 percent of all farms are within 3 miles of railroad stations, about 94 percent of all farm homes are within 3 miles of schools, and associational life above a family level, while not formally organized, is almost constant. Average housing is poor because a great number of the houses constructed for transient laborers only are being used for permanent residences. Almost 46 percent of the farm houses have only one room, and more than 76 percent have not more than two rooms. Only 9 percent have five or more rooms. Many of the poorest ones are built of mud-plastered poles or of sugarcane stalks. The illiteracy rate is high. The great mass of transient laborers needed for the harvest have a low standard of living in both the sugar belt and in the areas in which they reside permanently. The wages, housing, and community facilities available to field workers are in sharp contrast to those of the sugar-factory workers, which are good.

THE VINEYARD BELT

The vineyard area of Mendoza, like the sugarcane area of Tucuman, is easy to see and describe. One's deepest impressions are of grapes everywhere; numerous *bodegas* (wine factories); good cement roads, winding between small farms, passing through village after village, and filled with trucks loaded with grapes; and everything - residences, fences, business buildings, even the provincial capitol - built of adobe brick.

The Mendoza settlement, which was founded in 1562 by immigrants from Chile, is so far inland in Argentina that most of its commercial contacts were with Chile until the railroad reached the city in 1880. Because of water power, the area specialized for 200 years as much in wheat and flour production as in grapes. It early began, however, to produce dried grapes and spirits. Field crops and vines were on land irrigated by water from a ditch that had been constructed by the Indians. Furnishing alfalfa pasture for livestock on the way to Chile was the chief contribution of irrigated farming in the area before 1860. Even before the coming of the railroad, however, the area entered something approaching large-scale grape production to supply the demand of the many Italian and Spanish immigrants that were settling the area around Santa Fe in the 1860's and 1870's. Wine was at first transported out of the area on muleback, later in great high-wheeled carts drawn by oxen.

The vineyard area was next after the cattle belt to develop into the type of specialized production that it has since consistently practiced. It not only went

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through a normal pioneer period of trial and error but had to win its way in competition with a number of other areas, which sometimes placed embargoes on its products. After the belt was thoroughly established, between 1880 and 1900, it became recognized as the grape kingdom of Argentina, and the whole nation helps it once a year to celebrate La Vendimia, its great annual grape festival.

The area of the Mendoza irrigated oasis is not large, grape farms are small, and the population dense and homogeneous. The vast majority of both the farmers and towns-people are either Spanish or Italian, and more than 76 percent of them have lived in the area for more than 25 years. More than 80 percent of the producers are owner-operators. Few transient laborers are required even for the grape harvest. The result is that the Mendoza oasis, while divided into a number of village neighborhoods, is quite thoroughly and completely a community with a common major economic enterprise, common ideologies, and local pride. Farms are so close together that the whole settlement pattern is almost a village type, with schools, plazas, and motion pictures within walking distances of farm homes. During the harvest season men, women, and children from adjoining farms and villages work in gangs, and each person thus comes to have a wide circle of acquaintances. Farm homes, though not always good, are practically always constructed of adobe brick and average above those of most other areas of the nation.

When grapes are produced by tenant farmers, the rental contracts practically always call for a salary payment and a share of the crop, usually 85 pesos per hectare (\$10.24 per acre at the official rate of exchange, 1 peso equals 29.7733 United States cents) and 7 percent of the profit from the crop. The owner furnishes not only the land but the vines and the home for the tenant. A new housing law prescribes minimum standards for tenant houses.

In the 1942-43 season adult grape pickers received about 6¢ per 100 pounds, delivered to the truck at the end of the rows. The average adult picker could earn about \$1.25 per day, the exceptionally good pickers as much as \$2 per day.

#### THE FRUIT BELT

The Rio Negro Valley fruit belt is another irrigated area of intensive farming and dense settlement. Unlike the vineyard area, it is a new development with a heterogeneous population. Less than 30 years ago the present orchard lands of the valley were a part of immense landholdings that had been sold to cattlemen and sheepmen back in the 1880's after the Indians had been driven out or killed. The Neuquen River irrigation dam was started by the Southern Railroad in 1915, but the major portion of the settlers did not arrive until after the completion of the project in the 1920's. Immigrants then came from many nations, and Argentineans moved in from other parts of the country. Of the 2,418 farm entrepreneurs in the chief fruit-producing *departamento* (county) only 442, or 18.28 percent, were native-born Argentineans in 1937. Considerably more than half the fruit producers are Italians and Spaniards, but 12 other nationalities are in the county, represented by 10 or more settler families. Approximately 80 percent of them are now owner-operators.

Most farms are about 15 acres in size and are planted up to the doorstep, so to speak, with apple and pear trees, and often some grapes. Much of the work is done by family labor, but the heavy demand during thinning and harvesting seasons requires considerable additional assistance. Since, however, there are two periods of seasonal labor and the harvesting season is long, most laborers live in the local area. Each year some seasonal laborers come into the area, generally the same ones returning year after year, and are housed in the homes of the farmers who employ them.

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The majority of the farmers in the Rio Negro Valley Fruit Area who came early and stayed have completed or are just now completing final payments on their land. Few immigrants were horticulturists before they came to Argentina, and they, therefore, failed or had a difficult struggle. Some made what they call their "America" (small fortune) quickly and returned to their native lands. Those who stuck, and their sons, are gradually learning fruit culture under the detailed supervision of the Southern Railroad Experiment Station. Like practically all other immigrants in Argentina, few of them have become naturalized, but they are building new homes, some of them are buying extra land, and practically all are proud of their accomplishments and status. During the struggle upward they lived in poor houses and reared their children without adequate school facilities. As late as 1937 approximately half of them (49 percent) still lived in one- and two-room, mostly mud, houses. As they complete payments on their farms there is almost an epidemic of new-house building, which follows a universal pattern of five-room brick structures. They are at the same time building new brick schools and installing electric lights and radios in their homes.

Not all settlers in the Rio Negro Valley irrigation area are fruit growers, and not all fruit growers live in this area. Some Rio Negro Valley farmers are primarily vegetable growers, others specialize in growing alfalfa for seed, and a good many are diversified farmers. There is a large citrus-fruit area in Corrientes, a large mixed-fruit-producing area in the Parana River delta near Buenos Aires; fine oranges are produced in Tucuman, and grapes, apples, and pears in Mendoza.

THE DESERT-SCRUB AREA

In this article no attempt has been made to blanket the geography of Argentina with even a scanty description. Only the heart of each major type farming belt has been described. Such large areas of desert, or semidesert, land, upon which people live, have been left out of the description thus far that something should be added about them. A vast area, which might best be described as desert scrub, starts with the Bolivian and Chilean boundaries, swings south to the three rivers which flow from west to east across northern Patagonia, and spreads eastward to the cereal and alfalfa cattle-feeding belts. In this great area is approximately one-third of the total land area of the nation, with its aridity broken only by irrigation oases and its people making a precarious living in various ways. The rainfall is not sufficient to support farm crops or even good pasture. Both human and animal population is sparse. Goats, burros, small mules, and some cattle in the north, and sheep and cattle in the south, constitute the chief farm enterprises. Many persons from these areas furnish the major portion of the transient labor supply for the sugarcane, wheat, grape, and fruit harvests. In the north many of them cut wood for sugar factories. Most of them herd goats or sheep, live in great isolation, in exceedingly poor houses, and on a generally low level.

Two areas that are fair samples are the Departamento Capital in La Rioja and Departamento Sarmiento in Santiago del Estero. These two counties cover a geographic area of 1,280 square miles and have 1,080 farms. Only 5,760 square miles or 0.9 percent of the area is in cultivated crops. The farm working population averages just a little more than 2 per square mile, 85.2 percent of it, family labor. Less than 15 percent of the farms are more than 1,600 acres in size, but these farms include more than 81 percent of all land. Almost 15 percent of the farms are more than 15 miles to the nearest railroad station, and more than 15 percent of the farm homes are more than 9 miles from the nearest school. The heads of families are about 37

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percent illiterate in one county and 59 percent in the other; 50 percent of all farm-houses have only one room, and an additional 34 percent have only two rooms; 92.4 percent of the farmers are Argentine-born, 37 percent of whom have lived on the same farm for more than 25 years. These people constitute a small segment of the nation's population and produce a small percentage of the nation's agricultural produce. They constitute that segment of the nation's population which participates less in the culture of the remainder of the nation's society than any other group living in Argentina.

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## EIRE'S WARTIME AGRICULTURE . . . . .

By Mary E. Long\*

With the wartime scarcity of shipping facilities and the cessation of foreign imports of both foodstuffs and feedstuffs the Irish Government is endeavoring to guide the country's agriculture away from the traditional livestock economy into the channels of direct food production. Emphasis is being placed on crops of high food value, such as wheat, potatoes, and other vegetables, which can be readily utilized for human consumption. Increased production of flax fiber is also being encouraged. Through this program during 3 years of war, Eire, a neutral nation, has been able to supply most of its own food requirements. The assurance of food supplies in future war years will probably require a still greater conversion of its agricultural industry to food crops.

The area of Eire totals about 17,000,000 acres of which, in recent pre-war years, about 1,500,000 acres were cropland (excluding that under hay), 2,200,000 were in hay, and 8,000 in pasture. The remaining 5,300,000 acres were in forests, bog and marsh land, lakes, and rivers. As a result of the measures directed toward wartime self-sufficiency, the area of cropland has been more than doubled at the expense of permanent pasture and hay. There has been little change in the area of forest and non-agricultural land. The 1942 area in crops amounted to 3,100,000 acres, with 1,300,000 in hay and 7,200,000 in pasture.

It is interesting to note that this wartime change in the agriculture of Eire is in a sense a reversion to the agricultural conditions of nearly one hundred years ago, when the population was more than 5 million as compared with less than 3 million in 1936, and before the development of the export trade in livestock and dairy products. In 1851, the first year for which acreage figures were published in the Statistical Abstract of Eire, the area in crops was 3,500,000 acres, with one million acres in hay in 7,400,000 acres in pasture. Within a short period after Great Britain's entrance into World War II, the Irish Government took steps to regulate agriculture by passing a Compulsory Tillage Order which required all occupiers of land to plow a minimum area of their holdings equivalent to 12.5 percent of the total acreage farmed. As a result of this first legislative action, 410,000 acres of grassland were plowed up and diverted to the production of such crops as wheat, barley, potatoes, hay, oats, and sugar beets.

Again in October 1940 a further amendment to this original Compulsory Tillage Order was enacted, increasing the amount of land to be cultivated in the 1941 planting season to 16.66 percent of the total arable acreage. This new regulation was applicable to all farms of 10 acres or more. Two months later, however, a revision was made in the rate at which grassland should be plowed up for the production of grain and root crops, increasing the percentage from 16.66 to 20 percent. This latter action was necessitated by the greater difficulty in securing imported foodstuffs for both human and animal consumption as a result of further decreases in shipping facilities.

\* Office of Foreign Agricultural Relations.

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Still other changes in the general production program of Eire were evidenced by the passage of the Compulsory Tillage Order of 1942 in November 1941, which specified that every farm operator of 10 or more acres of land should cultivate not less than 25 percent of this area during the planting season of 1942. The only exceptions to this Order were tracts of land allocated to military and public recreational purposes, such as race tracks and golf courses, if exempted by the Department of Agriculture prior to December 1, 1941. For 1943 the rate of conversion of cultivable land to a productive state will remain the same as for 1942, namely 25 percent, except for the added change of making the Order applicable to all holdings of 5 or more acres.

SPECIAL CROP-EXPANSION PROGRAMS

In addition to urging farmers to cultivate at least 800,000 extra acres of wheat, grain, and root crops, the Irish Government took over uncultivated land in nine counties and maintained an organization to supervise the plowing and general working of these areas during the planting season of 1941. This important aspect of the Government's expansion of agriculture was confirmed by the Parliament's passage of an Order in the fall of 1941 granting the Minister of Agriculture full power to take possession of all holdings and arrange for their cultivation in the event individual owners were unable to comply with the provisions of the Compulsory Tillage regulations. Recently, the Minister of Agriculture announced a goal of 600,000 additional acres of land to be plowed up during the 1943 season as a further promotion of Eire's wartime agricultural-production program in an effort to maintain food supplies during 1944. Increased vegetable production has also been sponsored by the Department of Agriculture through the issuance of free seeds, fertilizers, implements, and spraying materials to 16,000 unemployed plot holders. An additional group of 10,000 plot holders has been sponsored under the facilities of the Local Government Allotments Acts or through parish councils. The number of private allotment plots in existence during the 1941 season revealed a substantial increase over any previous year with a total estimate of more than 30,000 as compared with about 5,000 in 1939.¹

BREAD-GRAIN REGULATIONS

In accordance with a Government plan designed to double the wheat acreage in 1941 in an effort to fulfill the country's domestic wheat requirements, legislation became operative on January 27, 1941, to the effect that no miller could manufacture or sell wheat flour of less than 90-percent extraction.² A Government subsidy of £1,900,000 (\$7,667,000) was created in 1941 to be paid to grain producers as an assurance that retail prices of bread and flour might not exceed certain fixed limits. This payment did not prove adequate, however, as evidenced by the Government's decision in 1942 to advance the price of flour by 5s. (\$1.01) per barrel.

Arrangements were also made in the fall of 1941 by the Irish Government to withhold as a reserve for human consumption a certain portion of the 1941 barley crop. No barley grain was to be allocated to the farmer for feeding purposes. The amount of the reserve was determined by the amount of wheat that the Government was able to import or had a possibility of importing during 1941 and 1942.

¹ The size of these allotments is estimated by the Minister of Agriculture at 1/8 acre, which would mean the area covered by these plots increased from around 625 acres in 1939 to approximately 3,750 acres in 1941. ([Eire] Dept. Agr. Jour. March 1942, pp. 28-29.)

² This percentage was increased to 95 percent a few months later and finally established at 100 percent in 1942.

TABLE 1.—Acreage and production statistics of the principal crops grown in Ireland during the period 1929-1942

YEAR	WHEAT		RYE		BARLEY		OATS		POTATOES	
	1,000 acres	bushels	1,000 acres	bushels	1,000 acres	bushels	1,000 acres	bushels	1,000 acres	bushels
1929	29	1,184	4	126	118	5,960	666	48,257	363	112,249
1930	27	1,092	4	118	116	5,517	644	44,250	347	87,265
1931	21	781	4	110	116	4,921	623	36,457	348	72,132
1932	21	831	3	94	103	4,974	632	43,904	348	112,576
1933	50	1,983	3	86	117	5,582	635	43,693	341	93,222
1934	94	3,803	2	66	143	6,779	583	39,262	343	94,999
1935	163	6,686	2	70	139	7,283	614	43,099	336	96,218
1936	255	7,839	2	68	130	5,707	559	36,188	334	90,387
1937	220	6,990	2	56	131	5,489	573	40,128	327	101,036
1938	230	7,398	2	54	118	5,142	570	39,133	327	91,872
1939	255	9,530	2	52	74	3,443	537	37,775	317	111,943
1940	305	11,681	3	82	132	6,481	681	50,707	367	116,416
1941	463	16,255	3	90	163	6,670	782	47,910	428	137,743
1942	575	19,097	4	130	186	8,039	878	53,763	426	116,461
YEAR	SUGAR BEETS		MANGELS		TURNIPS		CABBAGE		FLAX	
	1,000 acres	short tons ³	1,000 acres	short tons						
1929	13	158	83	1,968	188	4,123	30	370	6	2,645
1930	14	177	80	1,766	179	3,557	24	313	4	1,568
1931	5	38	84	1,725	182	3,699	25	272	1	267
1932	14	167	81	1,834	177	3,790	26	303	(4)	196
1933	15	226	80	1,761	170	3,444	25	287	1	405
1934	46	542	83	1,811	159	3,128	22	268	2	995
1935	57	631	84	1,825	152	3,128	20	247	5	2,296
1936	61	661	86	1,797	150	2,982	19	236	5	2,128
1937	62	622	86	1,860	149	3,064	17	225	4	1,861
1938	51	442	85	1,730	143	2,807	17	221	4	1,456
1939	42	436	86	1,895	141	2,890	14	197	4	1,904
1940	63	739	93	1,904	151	2,734	16	212	10	4,484
1941	78	806	96	1,971	157	2,947	17	230	16	6,041
1942	55	447	84	1,552	146	2,352	17	211	19	5,584

¹ Year beginning June 1.² Includes also beans and peas.³ Factory weight of sugar beets. Does not include beets used for livestock feeding purposes.⁴ Less than 500 acres.⁵ Contract acreage accepted for sugar production in 1941 was 73,566 acres.

Compiled from official sources.

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### MACHINERY AND FERTILIZERS

Further assistance in the promotion of farm production on a wartime scale was introduced shortly after the enactment of the original Compulsory Tillage Order authorizing loans to farmers to purchase agricultural machinery. Provisions were also made to supply fertilizers to producers at reduced prices. Prior to the war, the Government contracted to furnish a minimum of 1,000 long tons<sup>3</sup> of kelp (ashes of seaweed) per annum to producers in need of fertilizer, but the actual amounts obtained fell far short of this figure. Some economy in the use of fertilizers was thought to have been attained in the planting of fertilized grassland areas to grain crops. During this period there was a serious deficiency in stocks of superphosphates whereas the shortage of nitrogen and potash was thought to have been slight. A Government announcement was made in February 1941 that the distribution of superphosphate fertilizers for the 1941 growing season would be limited to approximately 50 percent of the amounts distributed in 1940. About the same amounts of phosphatic compound manures were available to producers for 1941 as in 1940. A further restriction on the distribution of fertilizers limited retail sales to producers for use on tillage crops rather than for application to pastures.<sup>4</sup>

### WHEAT AND OTHER GRAINS

In the counties now included in Eire, the area under wheat in 1851 totaled 429,000 acres. In the next half century the acreage declined to 32,000 in 1901. An increase due to war in 1918 brought the acreage to 135,000, but in 1931 it declined to 20,000. During the depression years wheat culture was revived, the acreage increasing to 255,000 in 1939. Under the pressure of compulsory tillage regulations, the acreage rose to 463,000 in 1941 and to 575,000 in 1942. The goal for 1943 was set at 650,000 acres, about 50 percent of which was seeded in the fall of 1942. No figures are yet available for spring seedings. If this goal is reached and normal yields are obtained, Eire will be fully self-sufficient in bread grains.

The acreage of other grains also declined after the middle of the nineteenth century but not so much as that of wheat. In 1851, the area under oats amounted to 1,585,000 acres. The lowest acreage since that time was 537,000 in 1939, with an increase to 878,000 acres in 1942. The barley acreage has followed a similar course, declining from 312,000 acres in 1851 to 74,000 in 1939 and rising again to 186,000 in 1942.

In 1942 the total production of wheat was placed at 572,000 tons, or 19 million bushels. The production of oats and barley was estimated at 768,000 and 172,000 tons, respectively, or 54 and 8 million bushels.

Wheat stocks harvested in the fall were at first believed sufficient to permit production of flour of 80-percent extraction instead of the 100-percent rate prevailing at that time,<sup>5</sup> but in view of the fact that a general shortage of many food commodities became so pronounced, the Government was forced to conserve existing supplies as far as possible. Latest reports indicate that the country's supply of grain for human consumption will probably be adequate for 1943.

<sup>3</sup> 1 long ton equals 1.12 short tons.

<sup>4</sup> STYLES, FRANCIS H. MONTHLY REVIEW OF ECONOMIC CONDITIONS IN EIRE. U. S. Cons. Rpt. 9777, 22 pp. 1941. [Typewritten.]

<sup>5</sup> GERRITY, C. M. MONTHLY ECONOMIC AND FINANCIAL REVIEW IN EIRE. U. S. Cons. Rpt. 26839, 23 pp. 1942. [Hectographed.]

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ROOT CROPS

The Irish peasant of the early nineteenth century was so dependent on potatoes that the failure of the crop in 1846 caused the great famine of the following winter and contributed to the emigration of half the population to America in the next few decades. In 1851 the area in potatoes in the counties now comprising Eire was 666,000 acres, and the average production in the years 1850-59 was 3,500,000 long tons or about 130 million bushels. With declining population and an improvement in living standards, the potato acreage declined to 317,000 in 1939, but under compulsory tillage regulations increased to 428,000 acres in 1941 and 426,000 in 1942. Yields, however, have not increased with acreage. In 1942 the average was 273 bushels per acre as compared with an average of 316 bushels per acre during the period 1937-41.

Sugar beets were planted on 78,000 acres in 1941 in the hope that enough raw material for sugar-beet factories could be obtained to supply the home-consumption demands for sugar which in normal years approximated 105,000 to 110,000 tons per annum, thus eliminating a need for importing either refined or raw cane sugar. In 1941 the sugar-beet yield was considered of possible sufficiency to realize a total manufacture of 100,000 tons of sugar to meet the annual rationed consumption requirements for the 1941-42 year. This production was obtained through the facilities of Eire's four sugar factories, the largest of which has a daily working capacity of handling 2,000 tons of beet with an output of about 300 tons of sugar.⁶

With shortages in 1942 of essential fertilizers necessary to achieve a substantial sugar-beet yield, the crop was not deemed adequate to fulfill consumption needs in Eire and a lower amount of ration was introduced in August 1942. Sugar-beet acreage had declined in 1942 by 23,000 acres as compared to the acreage for 1941. Preliminary returns for 1942 indicated yields of about 7.5 tons per acre with 17-percent sugar content, in contrast to a normal average of 10 tons.

FEEDSTUFFS

In pre-war years Eire's feedstuffs requirements outside of hay and pasture grass included 50,000 tons of linseed, cottonseed, and soybean cake and meal, palm-kernel cake, coconut cake, and fish meals, plus 289,000 tons of corn, all of which were imported with the exception of 10,000 tons of linseed cake which was produced domestically. Small imports of corn and oilseed cake continued during 1940, but by the middle of 1941 it was evident that the importations of all feedstuffs had practically ceased.

Probably as early as the seasonal year of 1938-39, a system of maintaining a reserve supply of beet pulp was undertaken by the Government as a partial assurance of feed supplies for livestock. At the end of 1940 this reserve totalled 55,000 tons of manufactured molasses-beet pulp from Eire's four sugar plants and was capable of replacing about 46,000 tons of imported corn.⁷ As of February 1941 the Chief Agricultural Adviser to the Irish Sugar Company announced that 58,000 tons of the molasses-beet pulp for livestock feed was available, with a feeding value equivalent to 58,000 tons of oats or of 48,000 tons of corn.

FIBER FLAX

Since 1940 a great deal of attention has been given to increased fiber-flax production. The Government's agitation for flax growing was prompted by arrangements

⁶ GERRITY, C. M. AGRICULTURAL NOTES - EIRE. U.S. Cons. Rpt. 9337, 9 pp. 1941. [Typewritten.]

⁷ STYLES, FRANCIS H. See reference cited in footnote 4, page 163.

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that were concluded with the British Ministry of Supply to purchase the entire Irish output of flax. Farmers residing in localities equipped with scutching facilities were especially urged to convert acreage to this type of production. The 1941 crop, which was harvested with an average crop yield, was grown on an area of approximately 16,000 acres in comparison to a total of 458 acres in 1932. Yields of scutched flax were reported for 1942 as exceptionally high in County Cork, ranging between 0.25 to 0.5 ton<sup>8</sup> per acre, but in many localities the yield is believed to have been less than normal.

### LIVESTOCK

In contrast to the trend in crop acreages, livestock numbers in Eire increased during the last half of the nineteenth century. The total number of cattle increased from 2,300,000 in 1851 to a high of 4,300,000 in 1924. Since then these cattle numbers have remained fairly constant, except for some reduction in the war years. In June 1942 they totaled 4,100,000 head. The recent decline has been entirely in dairy cows. Beef-cattle numbers show some increase.

The number of sheep in Eire remained fairly constant at about 3,500,000 head for many years but has declined rapidly since the outbreak of war. In 1942 the sheep population was reported at 2,700,000 head.

Hog numbers in 1942 were the lowest for any year on record. From a relatively constant pre-war figure of around one million head, the number reported in 1942 was only slightly above 500,000.

### DAIRY PRODUCTS

The milk production per dairy cow in Eire according to an estimate for 1941 averaged 380 gallons, which represented about 140 pounds of butterfat per cow. This is only slightly more than 50 percent of normal milk production, which in 1938 was believed to have equaled about 600 gallons of milk or 210 pounds of butterfat per cow per annum. The decrease has been attributed to an almost complete cessation of imports of feedstuffs and to the 1940 drought conditions which seriously affected pasture lands.

Because of shortages in both milk and butter supplies, the Government increased the subsidy on butter as of September 1942 in the amount of 15s. (\$3.03) per hundred-weight to promote the conversion of milk supplies into butter. Also, of this date, butter was rationed in Dublin and vicinity at 0.75 pound per person each week.<sup>9</sup>

### HIDES AND SKINS

Under normal circumstances Eire was able to produce about 70 percent of its annual requirements of footwear leather, but in pre-war years followed a policy of importing necessary "upper leather" stocks from the East Indies. As a result since 1940 domestic hides and skins have fallen below the regular annual estimated consumption because of utilization of domestic supplies for all footwear leather needs.

At the end of 1941, however, there was a considerable surplus of hides because of increased slaughterings of animals during the foot-and-mouth disease epidemic of 1940. Arrangements were concluded at that time with the United Kingdom for the exchange of hides for partially tanned leather and tanning materials from Britain.

<sup>8</sup> Estimated on basis of yields in short tons per statute acre.

<sup>9</sup> In October 1942 this ration was reduced to 0.5 pound per person.

TABLE 2.—Number of livestock in Ireland, 1929-1941

| YEAR | PIGS      |           |           | HORSES             |                    |           | CATTLE     |                    |                    |           |
|------|-----------|-----------|-----------|--------------------|--------------------|-----------|------------|--------------------|--------------------|-----------|
|      | SOWS      | BOARS     | OTHER     | TOTAL              | THOUSANDS          | THOUSANDS | MILCH COWS | HELPERS IN CALF    | OTHER <sup>1</sup> | TOTAL     |
| 1929 | Thousands | Thousands | Thousands | Thousands          | Thousands          | Thousands | Thousands  | Thousands          | Thousands          | Thousands |
| 1929 | 96        | 2         | 847       | 945                | 436                | 1,227     | 80         | 2,30               | 4,137              |           |
| 1930 | 111       | 2         | 539       | 1,052              | 448                | 1,224     | 87         | 2,727              | 4,038              |           |
| 1931 | 125       | 2         | 1,000     | 1,227              | 450                | 1,222     | 78         | 2,229              | 4,029              |           |
| 1932 | 109       | 2         | 997       | 1,108              | 446                | 1,230     | 68         | 2,727              | 4,025              |           |
| 1933 | 98        | 2         | 831       | 931                | 441                | 1,269     | 70         | 2,798              | 4,137              |           |
| 1934 | 103       | 2         | 863       | 968                | 429                | 1,309     | 75         | 2,702              | 4,086              |           |
| 1935 | 114       | 2         | 972       | 1,088              | 420                | 1,331     | 69         | 2,619              | 4,019              |           |
| 1936 | 105       | 2         | 910       | 1,017              | 424                | 1,348     | 63         | 2,603              | 4,014              |           |
| 1937 | 95        | 2         | 837       | 934                | 429                | 1,305     | 57         | 2,593              | 3,955              |           |
| 1938 | 97        | 2         | 860       | 959                | 442                | 1,280     | 64         | 2,710              | 4,056              |           |
| 1939 | 95        | 2         | 834       | 931                | 445                | 1,260     | 84         | 2,713              | 4,057              |           |
| 1940 | 103       | 2         | 944       | 1,049              | 459                | 1,229     | 85         | 2,709              | 4,023              |           |
| 1941 | 70        | 2         | 692       | 764                | 459                | 1,213     | 95         | 2,842              | 4,150              |           |
| 1942 | 49        | 1         | 469       | 519                | 452                | 1,206     | 94         | 2,784              | 4,084              |           |
| YEAR | SHEEP     |           |           | GOATS <sup>2</sup> |                    |           | POULTRY    |                    |                    |           |
|      | EWES      | RAMS      | OTHER     | TOTAL              | GOATS <sup>2</sup> | CHICKENS  | TURKEYS    | OTHER <sup>3</sup> | TOTAL              |           |
| 1929 | Thousands | Thousands | Thousands | Thousands          | Thousands          | Thousands | Thousands  | Thousands          | Thousands          |           |
| 1929 | 1,422     | 49        | 1,904     | 3,375              | 162                | 17,283    | 1,146      | 3,660              | 22,089             |           |
| 1930 | 1,490     | 51        | 1,974     | 3,515              | 158                | 18,181    | 1,127      | 3,592              | 22,900             |           |
| 1931 | 1,507     | 53        | 2,015     | 3,575              | 153                | 18,182    | 1,039      | 3,561              | 22,782             |           |
| 1932 | 1,500     | 54        | 1,907     | 3,461              | 149                | 18,049    | 1,051      | 3,436              | 22,536             |           |
| 1933 | 1,459     | 53        | 1,893     | 3,405              | -                  | 17,954    | 1,237      | 3,314              | 22,505             |           |
| 1934 | 1,310     | 47        | 1,574     | 2,931              | 122                | 15,982    | 1,159      | 2,843              | 19,984             |           |
| 1935 | 1,309     | 48        | 1,685     | 3,042              | 121                | 15,674    | 1,083      | 2,728              | 19,485             |           |
| 1936 | 1,320     | 49        | 1,693     | 3,062              | 119                | 16,416    | 1,105      | 2,791              | 20,312             |           |
| 1937 | 1,287     | 45        | 1,668     | 3,000              | 117                | 15,757    | 1,183      | 2,551              | 19,491             |           |
| 1938 | 1,322     | 49        | 1,826     | 3,197              | 113                | 15,975    | 1,150      | 2,505              | 19,630             |           |
| 1939 | 1,298     | 50        | 1,700     | 3,048              | 116                | 15,965    | 1,013      | 2,573              | 19,551             |           |
| 1940 | 1,301     | 46        | 1,724     | 3,071              | 109                | 16,448    | 1,053      | 2,474              | 19,975             |           |
| 1941 | 1,232     | 45        | 1,632     | 2,909              | -                  | 14,399    | 920        | 2,074              | 17,393             |           |
| 1942 | 1,121     | 39        | 1,533     | 2,693              | -                  | 14,484    | 1,040      | 1,841              | 17,365             |           |

<sup>1</sup> Figure includes bulls.<sup>2</sup> Figure includes kids.<sup>3</sup> Ducks and geese.

Statistical Abstract of Ireland, 1939 and 1941; Irish Trade Journal and Statistical Bulletin, March 1942. Estimates for 1942 are preliminary and unofficial.

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BRITISH PURCHASE CONTRACTS AND AGREEMENTS

The planned agricultural production of Eire since 1939 has been somewhat modified by Britain's interest in purchases of particular types of commodities, principally foodstuffs derived from livestock and poultry production.

Anglo-Irish wartime trade relations have taken the form of numerous contracts and agreements such as the following:

Cheese: In June 1940 the British Ministry of Food negotiated with the Irish Government for the purchase of the country's entire wartime cheese production, amounting to about 1,050 tons per annum. In 1942, however, the output was expected to be considerably decreased because of the shortage of rennet. The normal yearly production of cheese in Eire varies from 2,000 to 2,250 tons.

Bacon: At approximately the same time as the consummation of the cheese agreement, the British Government arranged to take all of Eire's surplus bacon up to an amount of 3,000 long tons per month. This represented a 50-percent increase over the previous export quota of bacon to Great Britain, which averaged about 2,000 tons a month.

Again in 1941 the British Ministry of Food renewed the purchase of bacon; it was reported to be willing to purchase Eire's entire production, amounting to 56,835 tons in 1941 and estimated at 56,900 tons in 1942. Actual bacon exports to the United Kingdom during 1940, however, averaged about one-third of total production, and these exports were decreased substantially in 1941 as a result of an approximate 25-percent decline in hog production. Bacon exports to United Kingdom terminated completely in May 1942, when the Ministry of Supply in Eire prohibited all exports of butter, cheese, cream, and pork and pig offals in an effort to assure sufficient foodstuffs for home consumption.

Prepared Meats: Negotiations were completed in the fall of 1941 between the Irish Government and the British Ministry of Food whereby the United Kingdom agreed to take the whole of the exportable surplus of Irish canned beef and prepared meats, amounting to about 60,000,000 pounds annually, with the Ministry of Food providing the required tin for the containers. Again, in July 1942, discussions were concluded between the British Ministry of Food and the Irish meat canners for the 6-month period ending December 31, 1942, to supply United Kingdom with £1,000,000 (\$4,035,000) worth of canned meat consisting of 6,000 tons of stewed steak and 2,000 tons of ready-cooked meats.

Potatoes: Very few surplus potatoes from the Irish crops have been exported to Britain within the last 3 years. The British Ministry of Food did contract, however to purchase 2,000 tons of early potatoes in 1941 at the same prices as those prevailing in the United Kingdom markets. In the same year several thousand tons of seed potatoes were also exported to Great Britain.

Flax: Aside from foodstuffs, Great Britain contracted in 1940 to purchase the entire fiber-flax production of Eire at prices for that year ranging from the equivalent of 25 cents to 32 cents per pound of scutched flax. Again in January 1942, additional arrangements between the British Ministry of Supply and the Irish Government were consummated to the effect that Great Britain should purchase all of the 1942 flax crop at an increased price, varying from 31 cents to 38 cents per pound, and that these prices should prevail in a contract whereby the United Kingdom would acquire title to all flax produced in Eire on an area not to exceed 25,000 acres for the duration of the war and one year thereafter.

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## OTHER FOOD SHIPMENTS

Other exports of foodstuffs to United Kingdom, which have been well maintained during the war, inspite of the fact that no special contract arrangement was made for definite purchase quotas, were of eggs, butter, poultry, and dressed beef, pork, mutton, and lamb.

## CONCLUSION

These adaptations of the agriculture of Eire to wartime conditions are probably sufficient to prevent actual hardship resulting from its position as a neutral nation within the war zone. The Government is continuing its study of possible further modifications in agriculture both during the war and in the post-war period. If the restrictions on shipping continue for long, there may be further reduction in yields because of a shortage of fertilizers, but for the immediate future the outlook is reasonably good.

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